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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,080	10/31/2001	Kevin S. Stein	4470-00613	3540
26753	7590	11/08/2004	EXAMINER	
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202			PIAZZA CORCORAN, GLADYS JOSEFINA	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/002,080

Applicant(s)

STEIN ET AL.

Examiner

Gladys J Piazza Corcoran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10, 11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**FINAL ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5, 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029) as set forth in paragraph 8 of the previous Office Action filed on May 5, 2004.

Isowa teaches a single-faced corrugated sheet making machine that includes first and second corrugating rolls (12 and 14) for forming corrugations on a core paper web (16), a pasting mechanism for pasting the crest portions of the corrugated paper web, and two pressure rolls (34 and 36) which are disposed on the outer surface of the second corrugating roll (14) to press and stick a liner (26) to the core paper web (see Figures; Page 9, lines 5-34). The second pressure roll (36) is recognized as reading on applicant's claimed "contact roll" as it is mounted downstream of the line of initial tangent contact of the liner web and acts to press the liner web against the corrugating roll (14). As to the limitations that the contact roll is closely spaced from and immediately downstream of the generator roll, such is met by the rolls in Isowa, for example see figures 7-9. As to the limitation that the contact roll lightly presses the single face web against the bonding roll, it also appears that Isowa meets this limitation by at least being capable of lightly pressing and further because Isowa teaches that the

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pressure applied is less than those of previous single facers. Furthermore, the contact roll in Isowa is considered capable of spreading the adhesive between the flute tips and the liner before gelatinization of the adhesive. It appears that Isowa teaches all the limitations of claim 1, with the exception of disclosing that the corrugated roll (14) is heated.

It is considered well known in the corrugating arts to provide the bonding roll in a single facer with heat in order to help with the corrugating of the medium web and the bonding of the single face web. For example, Osgood discloses a single facer machine for manufacturing single face corrugated paperboard is applied as evidence that it is known in the corrugated art to employ heated corrugated rolls to aid in shaping the core webs and bonding the core webs to liners (Col. 3, lines 41-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the corrugating roll (14) of Isowa with heat as such is well known in the art as evidenced for example by Osgood in order to aid in the shaping of the core web and aid in providing heat to the bonding adhesive.

As to claims 2, 3, 5, Isowa teach positioning said pressure roll (36) on a moving frame (38) which is constructed to be movable with respect to the frame body which holds the corrugating rolls, wherein the pressure roll (36) is controllable to be moved between an operating position near the corrugating roll (14) and a retracted position apart from the corrugating roll (14). Isowa further teach that pressure roll (36) is independently movable to approach and separate from the corrugating roll by an eccentric mechanism (40) and disclose the pressure roll includes a rotating axis

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inserted into a through hole of a lace (42) that is rotatably pivoted at the moving frame (38) via bearing (44). It appears Isowa further discloses the use of gears and a motor (e.g. an actuator) to work through the lace to cause the pressure roll to eccentrically move (Page 11, line 10 – Page 12, line 3). As to claim 6, Isowa appears to disclose an actuator of gears and a motor to vary the position of the contact roll, however providing a pneumatic cylinder with a cylinder rod end is considered to be a functionally equivalent alternative as is well known to one of ordinary skill in the art. Furthermore, Osgood is cited as evidence that as an alternative to mechanical means, a pneumatic cylinder may be used to exert force on a pressure roll to bias said pressure roll against a corrugating roll (col. 3, lines 34-40). It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively employ a pneumatic cylinder as the actuator of Isowa as Isowa's embodiment of employing gears and motors appears to be exemplary in nature, wherein Osgood discloses that pneumatic cylinders are known functionally equivalent alternatives to mechanical means and one of ordinary skill in the art would readily appreciate that only the expected results would be achieved.

As to claim 10, as discussed above, Isowa also discloses a method of enhancing the glue bond between a medium web and a liner web in a single facer apparatus for forming a single face corrugated paperboard web from a liner web and a corrugated medium web, with a fluted bonding roll on which the medium web is corrugated, a glue applicator that applies a starch based adhesive to the flute tips of the corrugated medium web while the medium web is on the bonding roll and a generator roll that

brings the liner web into initial tangent contact with the glued flute tips of the corrugated medium web on the bonding roll to form the single face web by positioning a rotatable contact roll on a rotational axis parallel to the axis of rotation of the bonding roll closely adjacent and immediately downstream of the generator roll (see figures 7-9), and loading the contact roll against the single face web with a light force uniformly distributed across the width of the web (the force applied in Isowa is disclosed as being lighter than that of previous single facers). Such force is considered to be sufficient to spread the adhesive between the flute tips and the liner before gelatinization of the adhesive and such would have been readily apparent to one of ordinary skill in the art at the time of the invention. As discussed above, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a single face web as shown by Isowa with a heated bonding roll as is considered well known in the art and further exemplified by Osgood.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029) as applied to claim 10 above, and further in view of Barney (US Patent No. 5,614,048) as set forth in paragraph 9 of the previous Office Action filed on May 5, 2004.

Isowa does not specifically disclose the particular force provided by the contact roll, however does disclose providing light pressure in order to reduce markings on the single faced web. It is known in the art as exemplified by Barney to apply a force of about 5 pounds per lineal inch (column 5, lines 54-59) in order to provide enough pressure to bond the single face web but light enough to not produce markings on the

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single faced web. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of enhancing the glue bond in a single face web as shown by Isowa and Osgood by providing a pressure of about 5 pounds per lineal inch for the contact roll as would have been well within the purview of one of ordinary skill in the art and as further exemplified by Barney in order to provide enough pressure to bond the single face web but light enough to not produce markings on the single faced web. Only the expected results would be attained.

4. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029) as applied to claims 3 and 10 above, and further in view of Lehmann (US Patent No. 4,136,546) and/or Kayser et al. (US Patent No. 6,073,548) as further taken with Giugliano et al. (US Patent No. 6,155,319) as set forth in paragraph 10 of the previous Office Action filed on May 5, 2004.

It is well known in the art to form the outer shells of pressure rollers from an elastic liner such as a steel inner liner with a rubber outer cover in order to provide deformable pressure with the roll. For example, Lehmann discloses an example of a pressure roll where the outer shell is formed of an elastic, with at least part elastomeric material and also discloses using a steel tube (column 4, lines 16-30). Kayser provides another example where an outer shell for a pressure roll is made elastic by forming the shell from a steel liner and an elastic outer layer (column 3, lines 17-25; column 7, lines 41-53). This would have been particularly obvious in view of the teaching by Giugliano which discloses that pressure rolls in single facers should have an elastic outer layer in

order to reduce vibrations in the apparatus and to reduce visible marks on the paper in the zones subject to compression (column 4, lines 1-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the single facer apparatus and method as shown by Isowa and Osgood with an outer shell formed of a steel inner liner and an elastic or rubber outer cover as is considered well known in the art as exemplified by Lehmann and Kayser in order to provide an elastic pressure roll to reduce vibrations and marks on the paper as shown by Giugliano.

***Allowable Subject Matter***

5. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: It is considered generally known in the corrugating arts to provide rolls that are "crowned" (tapered on the ends with a larger diameter in the center), however, absent any additional pertinent prior art, no prior art was found to show or suggest providing a contact roll as claimed where a dead shaft includes a larger diameter axial center portion joining reduced diameter opposite end portions and an outer shell having an axial center portion having greater wall thickness joining opposite shell end portions of reduced wall thickness in the claimed environment.



***Response to Amendment***

7. The declaration filed on February 19, 2004 along with the supplemental declaration filed on September 10, 2004 under 37 CFR 1.131 are sufficient to overcome the Marschke '375 (US Patent No. 6,602,375) and Marschke '263 (US Publication No. 2003/0075263) references.

***Response to Arguments***

8. Applicant's arguments filed on September 10, 2004 only relate to overcoming the Marschke '375 and Marschke '263 reference. The Examiner's responses (as set forth in paragraph 3 on page 14 of the Office Action filed on May 5, 2004) to Applicant's arguments filed October 14, 2003 are repeated below.

Applicant argues on page 6 that the references Isowa and Osgood both disclose "pressure roll" single facers which are unable to handle the requirements of high speed and lighter weight papers. The claim limitations as currently written do not exclude the "pressure roll" single facer as disclosed by Isowa.

Applicant argues on pages 6-7 that pressure rollers have a well-known meaning in the art of having high pressure, as exemplified by the pressure disclosed in Osgood. It is noted that the reference Osgood is only relied on to show the well known concept of providing the bonding roller with heat. It is further noted that applicant's claims do not exclude the pressure roller system as shown by Isowa. Finally, Isowa does disclose that the pressure roller system applies less pressure than those of previous systems.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gladys JP Corcoran  
Primary Examiner  
Art Unit 1733

GJPC